

REMARKS

Entry of the foregoing amendments to the application is requested on the grounds that the claims, as amended, patentably distinguish over the cited art of record or, alternatively, place the application in better condition for appeal. The claims more particularly point out and distinctly claim the subject matter which Applicants regard as the invention. No new issues have been added which would require further consideration and/or search, nor has any new matter been added. The claims as amended are believed to avoid the rejections applied in the Final Office Action for reasons set forth more fully below.

The Final Office Action of July 13, 2007 has been received and carefully reviewed. It is submitted that, by this Amendment, all bases of rejection are traversed and overcome. Upon entry of this Amendment, claims 1-20, 48, 49 and 68-71 remain in the application. Reconsideration of the claims is respectfully requested.

Claims 1-6, 9-10, 12-13, 15, 49 and 68-71 stand rejected under 35 U.S.C. 102(e) as being anticipated by Mardilovich et al. (U.S. Patent No. 6,770,353). The Examiner states that Mardilovich teaches a fuel cell including a substrate of electrolyte material, and a patterned film established on the substrate, the patterned film having a plurality of nanocolumns dispersed in a filler.

Applicants have revised independent claims 1 and 49 to recite that at least one of the plurality of nanowires (or means) contacts at least one other of the plurality of nanowires (or means). Support for these recitations may be found throughout the specification as filed, at least in Figures 1 and 2.

In sharp contrast, Mardilovich appears to teach continuous films having embedded discontinuous nano-columnar structures (Col. 2, lines 55-65). The nano-columnar structures are formed such that each one is isolated from each other one via a filler that encapsulates the respective nano-columns (see, e.g., Figs. 4A, 5A, 5B, 6A, 6B, 7A-7C, 9B, 9C), or via pores formed between the nano-columns (see, e.g., Figs.

10A-10C). Mardilovich neither teaches nor suggest that the nano-columns contact one another.

For all the reasons stated above, it is submitted that Applicants' invention as defined in independent claims 1 and 49, and in those claims depending ultimately therefrom, is not anticipated, taught or rendered obvious by Mardilovich, either alone or in combination, and patentably defines over the art of record.

Claims 7, 8, 11 and 14 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Mardilovich in view of Jeon et al. (U.S. Patent Publication No. 2004/0197626). The Examiner states that Mardilovich does not disclose 1) that the current collector material includes high temperature metals, such as gold, copper, stainless steel, nickel alloys, and mixtures thereof; 2) that the anode metallic components includes nickel-copper alloys, platinum, palladium, ruthenium, alloys thereof, or mixtures thereof; or 3) that the cathode metallic components include rhodium, platinum, silver, alloys thereof, or mixtures thereof. The Examiner further states that Jeon discloses a solid oxide fuel cell in which the anode and cathode include catalyst nanoparticles. The Examiner concludes that it would have been obvious to include the materials of Jeon in the fuel cell of Mardilovich because these components are good conductive materials.

Mardilovich does not teach or suggest the fuel cell of Applicants' claim 1, in part because Applicants recite that the nanowires are dispersed, such that at least one nanowire contacts at least one other nanowire, in the patterned film (similar to a network of nanowires), and Mardilovich teaches nano-columnar structures that are substantially aligned and separated from each other on a substrate surface. The nano-columnar structures of Mardilovich are clearly not connected to each other, rather they are discontinuous and aligned on a substrate and have material or pores established therebetween.

Furthermore, it is submitted that Jeon does not supply the deficiencies of Mardilovich. Jeon teaches the use of catalyst **nanoparticles** in an anode or a cathode. The nanoparticles are not the same as the nanowires recited by the Applicants. At most, the combination of Mardilovich with Jeon may render obvious a film having discontinuous nano-columnar structures and catalyst nanoparticles (Mardilovich and Jeon). However, it is submitted that this combination does **not** render obvious a patterned film having **nanowires** dispersed therein, where at least one of the nanowires contacts at least another of the nanowires.

For all the reasons stated above, it is submitted that Applicants' invention as defined in claims 7, 8, 11 and 14 is not anticipated, taught or rendered obvious by Mardilovich or Jeon, either alone or in combination, and patentably defines over the art of record.

Claims 16-20 and 48 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Mardilovich. The Examiner states that Mardilovich describes the fuel cell of claim 1 except for the diameter and/or length, or that the fuel cell is connected to an electrical load. The Examiner concludes that altering such dimensions and connecting the fuel cell to a load would be obvious to one skilled in the art.

It is submitted that Mardilovich does not teach or suggest the fuel cell of Applicants' claim 1, from which claims 16-20 depend. Further, it is submitted that claims 16-20 are patentable in view of their dependency from claim 1, at least in part because Mardilovich teaches nano-columnar structures that are isolated from, not connected to, each other.

Claim 48 is directed to a method of using a fuel cell that includes a substrate, and a patterned film established on the substrate, the patterned film having a plurality of nanowires dispersed therein, at least one of the plurality of nanowires contacting at least another of the plurality of nanowires. As previously set forth, Mardilovich does not teach or suggest such nanowires.

Appln. S.N. 10/699,456
Response dated September 12, 2007
Reply to Final Office Action of July 13, 2007
Docket No. 100200584-1
Page 10 of 10

For all the reasons stated above, it is submitted that Applicants' invention as defined in claims 16-20 and 48 is not anticipated, taught or rendered obvious by Mardilovich, either alone or in combination, and patentably defines over the art of record.

In summary, claims 1-20, 48, 49 and 68-71 remain in the application. It is submitted that, through this Amendment, Applicants' invention as set forth in these claims is now in a condition suitable for allowance. Should the Examiner believe otherwise, it is submitted that the claims as amended qualify for entry as placing the application in better form for appeal.

Further and favorable consideration is requested. If the Examiner believes it would expedite prosecution of the above-identified application, she is cordially invited to contact Applicants' Attorney at the below-listed telephone number.

Respectfully submitted,

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